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Abstract

In education, the road from research to practice is a long one and includes research, development, and application. The notion of a continuum from research to practice was recognized in 1965 when the provisions of the Cooperative Research Program were incorporated into the Elementary and Secondary Education Act. Since that time, however, total funds for research and development have leveled off and expenditure priorities have been given to specific research and dissemination programs such as regional R & D centers and the ERIC system. These programs, meritorious as they are, have left less and less for general research purposes. Research itself is the basic capital in the research-dissemination-application system. Development and application cannot long be supported at the expense of research. (DE)

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CAPITAL INVESTMENT FOR RESEARCH & DEVELOPMENT

Roald F. Campbell

As part of the appraisal of American education being made at this conference, specific attention should be directed to the status of research and development in education. In education, as in agriculture and health, the road from research to practice is a long one and includes research, development, and application. We need to see that all parts of this program, research as well as development and application are nurtured.

Beginning in 1954 with the passage of the Cooperative Educational Research Act, the Congress has supported continuously educational research. In 1965 provisions of the Cooperative Research Program were incorporated into the Elementary and Secondary Education Act, particularly Title IV of that legislation. At that time there were great plans for improvement in education. Research was to be supported in many universities and other institutions through funding of unsolicited proposals. Research and Development Centers were to be established at a few universities. In addition, new institutions, regional educational laboratories, were to be created particularly for the purpose of disseminating research findings to schools and colleges to the end that research would make a difference in practice. The idea there is in a sense a continuum from research to practice was thus recognized and funding was provided for the support of all of these related activities.

Our hopes of 1965 have been only partially realized. R & D Centers and regional labs have been established but up to now practices in most schools and colleges have not changed much. Why?

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There are several possible explanations. First, the establishment of a research - development - application system is much more difficult than any of us thought. We assumed we could do in education in five years what we took almost a hundred years to do in agriculture. Effecting change in education will take more time. Second, due to other money demands the level of funding originally thought necessary for the research - development - application system has not been provided. Each year new ideas have been funded often at the expense of ideas that were barely off the ground. For instance, even before R & D Centers were firmly established and adequately funded regional labs were promoted and organized across the country. Third, there has been a push for instant application. Our schools and colleges are not always effective, particularly as they deal with minority groups in our society, hence there is a desperate need to apply new knowledge to the operation of these institutions. But new knowledge in education and the related disciplines is not abundant nor can it be generated overnight. In many cases the call for new knowledge finds the cupboard bare.

This brings me to a fourth aspect of our present predicament. Funds for research and development, particularly through Title IV of ESEA, have leveled off at about 90 million dollars per year. But this figure is very misleading unless its make-up be examined. There has been some disposition, at least in the minds of the researchers, to use a greater and greater part of the $90 million for specific purposes: R & D Centers, regional labs, evaluation projects, major demonstrations, national achievement studies, statistical surveys, and dissemination programs particularly through the ERIC system. These programs, meritorous as they are, leave less and less for general research purposes, including unsolicited research. In the 1970 budget some $27 million is supposed to be available for general research, including only some two or three million for unsolicited

research. Even these figures are somewhat misleading, if, as we are told, commitments to research in vocational education, heretofore, separately funded, are now to be picked up by the general research fund.

To compound the problem, not only have increasing commitments for specific research and development projects left less and less money for general research and development purposes but in this process, as the researcher sees it, an increasing proportion of the money made available has been for development and dissemination, hence a decreasing proportion has been available for research itself.

While all parts of the research - development - application system deserve support, development and application cannot be supported at the expense of research itself. To allude to agriculture again, it would be like supporting the work of county extension agents, but refusing to support the work of soil chemists. County agents would have nothing to disseminate without the agricultural researchers back of them. Research itself is the basic capital in the research - dissemination - application system in education as it is in agriculture.

While the research components in education is weak, there are some promising beginnings. For instance, Coleman's monumental study on Equality of Educational Opportunity (U.S. Printing Office, 1966) has done a number of useful things. It appears that a pupil's school achievement is strongly related to the educational backgrounds and aspirations of the other students in the school. Peer group relations may be more important to learning than teachers or instructional procedures. This deduction alone has caused other scholars to examine Coleman's design and methodology. Even more important, it has

stimulated additional studies in which the factors related to pupil achievement are defined more precisely and data are collected more carefully. As this body of literature accumulates, the problems faced by Coleman can be answered more fully and implications for school practice can be drawn with greater confidence. Instead of detracting from Coleman's work, this process attests to its importance.

An example of what can be done by way of synthesizing many studies in a given area is found in Bloom's Stability & Change in Human Behavior (Wiley & Sons, 1964). Building upon hundreds of longitudinal studies conducted over a period of years, Bloom was able to say with considerable confidence that with respect to many characteristics, including general intelligence, a person ordinarily reaches fifty percent of his potential by age four. One interpretation of these results suggests that the greatest educational potentialities exist in the early years while growth is rapid. If this be true, implications for educational practice in home and school are easily deduced.

But research deals not only with findings. More important, it is a way of thinking about man and his relations to his environment. My own field, educational administration, has been greatly influenced by various concepts of management. From about 1910 to 1930 the field was dominated by the ideas of Frederick Taylor and scientific management. Time and motion studies made it clear that most jobs could be organized more efficiently. Largely due to Elton Mayo and the Western Electric studies, the human relations approach to management dominated the period 1930 to 1950. Since 1950 a more balanced view of administration or management, based in large part on the conceptual and empirical work of scholars in the social sciences, has begun to emerge. Clearly, as suggested by J. W. Getzels and others in Educational Administration as a Social Process, (Harper & Row, 1968) in schools and colleges, the administrator must take account of both the organi-

zational expectations and the personal needs of those who work in the organization. It is significant to note that when scientific management held sway research dealt chiefly with job analysis; when human relations was the mode, research focused on interpersonal relationships; only in the recent period has research in administration encompassed more complete organizational behavior.

To return to my main point, in many ways our short history in funding educational research at the national level is a great success. We have found that a federal agency can establish promising R & D Centers at some of our universities, that potentially effective regional labs can be invented and made operative, and perhaps most important that researchers in many fields - sociology, psychology, anthropology, economics, political science, psychiatry, neurology, pediatrics, as well as those in education - can be encouraged to study educational problems through unsolicited extra-mural research programs. The potential contribution from researchers in many disciplines is essential to the research part of our program. This contribution will wither unless federal funding for general research purposes and for the training of researchers is provided.

Permit me to stress again the need for a balanced program of research, development, and application. No part of this system can be neglected. All parts need federal funding at substantially higher levels than is now contemplated. In our desire to develop and apply what we know, we must not neglect our capital investment, the research activity itself.

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